

# Work Order ID 67615

Monday, March 28, 2011 2:54:24 PM



Page 1

Item ID: D205-596-107

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft Extended

Stop



Start Date: 3/28/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/14/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*H*

Date: 11-03-28

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D205-596

Rev B

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-594 bluefile & type labels per PPP D205-596-107 CHG002

*M 11 05 06 (1)*  
*for CL 11-5-6*

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

1- Bend as per Dwg D2890 using CNC bender program D2890  
2- Mark cut lines as per dwg D205-596-107

*SAD 11-04-21*

130

0.00



QC15- Crosstube Dimensional Check

QC

Memo

0.00

Quality Control

*8 11/21*

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Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00



Crosstubes

Crosstubes

Memo

0.00

1-Cut as per dimension sheet  
2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

DD/14-21

SAD 11-04-28

①

160

0.00



Crosstubes Chemical Conversion

HandFinishing

HandFXtube

Memo

0.00

Chemical Conversion Coat per QSI 005 4.1

SAD 11-04-28

①

170

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

8/10/28

①

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Item ID: D205-596-107

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Setup Start



Revision ID:

Stop



Item Name: Crosstube Aft Extended

Start Date: 3/28/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/14/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

180

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside with Immron per QSI 005 4.2

2T 11 05 04 (1)

190

0.00



QC14- Inspect Spray Paint

QC

Memo

0.00

Quality Control

M 11 05 05 (1)

200

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe  
2- Apply magnobond 6398 as per dwg D205-596-107 Magnobond 6398  
Batch: 116677 EXP: 11-08  
3-Inst

2T 11-05-05 (1)

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Item ID: D205-596-107

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Aft Extended

Start Date: 3/28/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/14/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

11 05 06 ①

220

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D205-596-107

Location: 113

PPP Rev: E

11/5/08

230

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/5/08

11-08-4  
①

# Picklist Print

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Page 1

Work Order ID: 67615

Parent Item: D205-596-107

Parent Item Name: Crosstube Aft Extended



Start Date: 3/28/2011

Required Date: 4/14/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:D 05.03.21 Added bending procedure KJ/JLM  
 IPP Rev:E 08-01-10 ECN 1075 DD  
 IPP Rev F 08.04.28 Added bending & mat'l EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2940-1  Support		Manufactured	No			200	Each	21.0000	2	2		11-05-05	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG052		21							
				45203		1							
				<u>60271</u>		20							
D6008-180  Crosstube Extrusion		Manufactured	No			110	Each	23.0000	1	1		11-04-20	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG		23							
				46779		8							
				59249		15							
MS21920-28  Clamp(per MIL-DTL-8783C)		Purchased	No			200	Each	57.0000	4	4		11-05-05	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FG		5							
				105884		5							
				LG050		52							
				116039		2							
				<u>116839</u>		50							

# Picklist Print

Page 2

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Work Order ID: 67615



Parent Item: D205-596-107



Parent Item Name: Crosstube Aft Extended

Start Date: 3/28/2011

Required Date: 4/14/2011

Start Qty: 1.00

Required Qty: 1.00

D3595-063-530

Manufactured No

200

Each

64.0000

4

4



FT 11-05-05

RUBBER CUSHION

Location

Loc Qty

Loc Code

LG055

64

63407

26

67185

38

X4

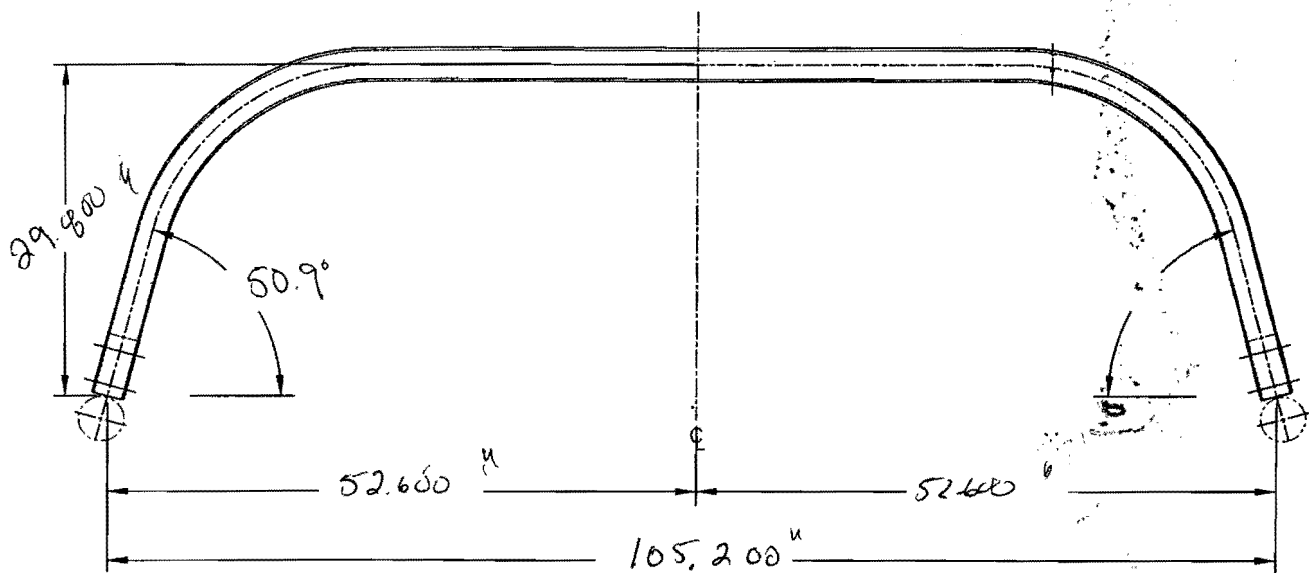
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Shop Packet Print

Page 2

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	67615
<b>Description:</b> Crosstube High-High Aft		<b>Part Number:</b>	D205-596-107
<b>Inspection Dwg:</b> D205-596-107 <b>Rev:</b> B			<b>Page 1 of 1</b>

Required Dimension	Min	Max
Height	29.7	29.9
1/2 Span	52.4	52.6
Angle	49	52
Total Span	104.8	105.2



Comments

QC15 Inspection	6
Date	10/21

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	08.04.21	Dwg Rev updated	KJ/JM	

**PARTS LIST:**

Qty	Part Number	Description
X	D205-596-107	CROSSTUBE ASSEMBLY, HI-HI AFT
1	D6008-180	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

**GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURE FROM D6008-180  
FINISHED LENGTH = 127.28 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH  
VIBRATING STYLUS
- 7) WEIGHT: 50 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO  
BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT  
WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION  
AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1  
SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE  
CROSSTUBE SUPPORT.  
**NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-28 CLAMPS WITH LONGER OR SHORTER  
MS21920-XX CLAMPS TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF  
1.5 THREADS IN SAFETY ON THE NUTS.**
- 13) TORQUE CLAMPS 80 TO 100 IN-LB

**DEO ATTACHED**

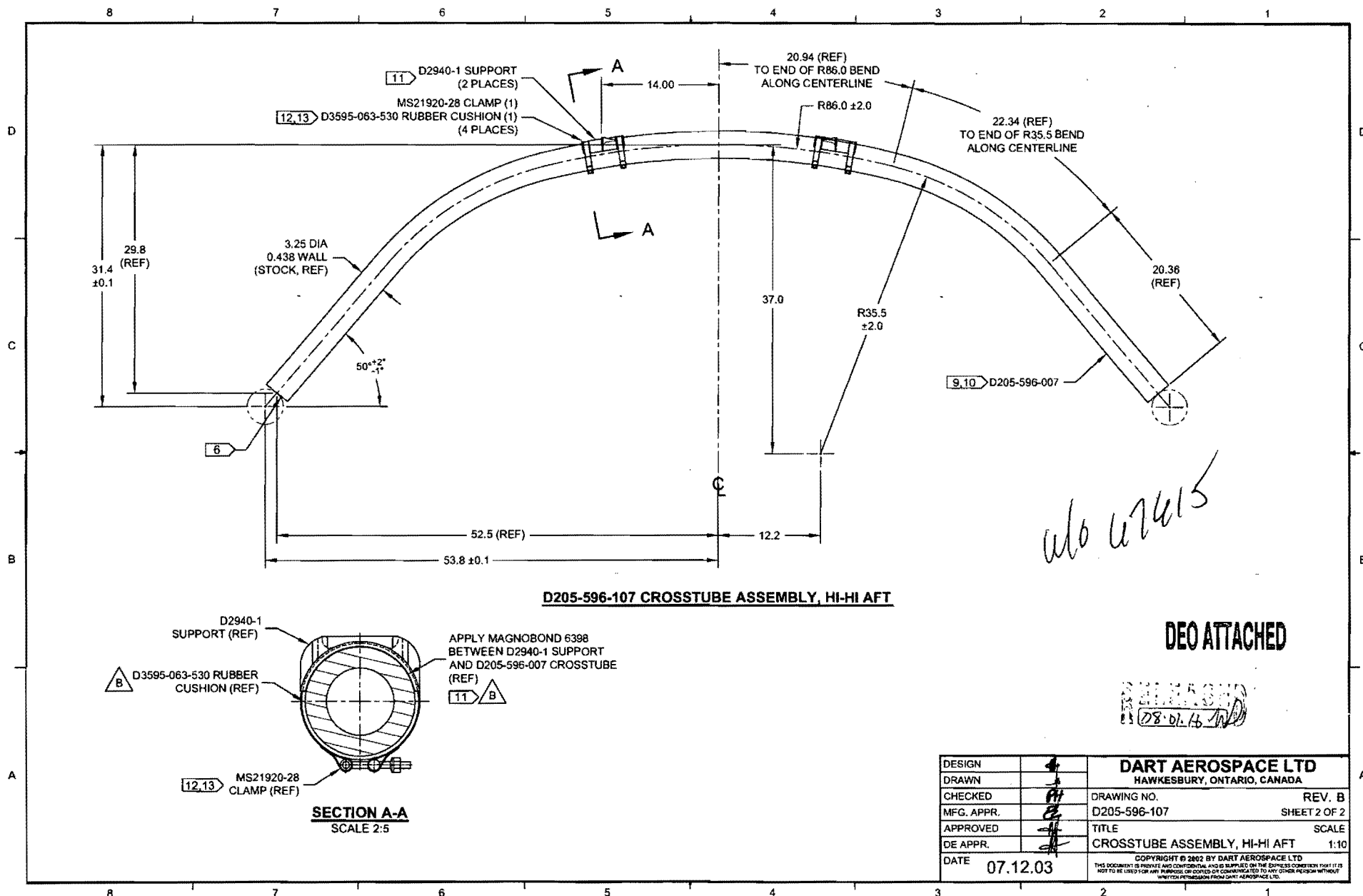
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07-12-03  
WJ

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RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 67615

07-11-03-28

B	SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-1009 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-530 CUSHION	MB	07.12.03
A	NEW ISSUE	DS	02.11.20
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D205-596-107	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSEMBLY, HI-HI AFT	NTS
DATE	07.12.03	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	





DRAWING NO. D205-596-107	TITLE CROSSTUBE	REV. B	<b>DART AEROSPACE LTD ENGINEERING ORDER</b>	D.E.O. NO. D205-596-107-B-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>1/1</i>	CHECKED <i>PH</i>	MFG. APPR. <i>EE</i>	APPROVED <i>MD</i>	DE APPR. <i>#</i>		
DATE 09.05.01	DATE 09.05.15	DATE 09.06.15	DATE 09/06/16	DATE 09/06/16		

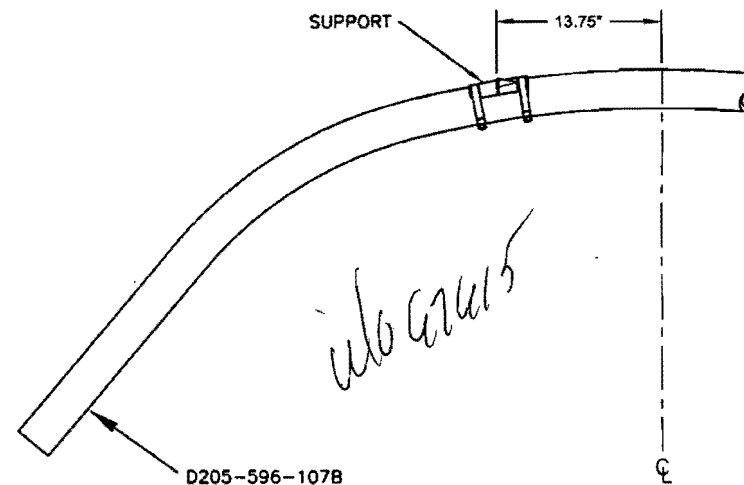
**CHANGE:**

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D205-596-107B	CROSSTUBE ASSEMBLY (214 HI-HI AFT)

THE D205-596-107B CROSSTUBE HAS THE SAME PARTS LIST AS THE D205-596-107 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D205-596-107 CROSSTUBE.

**RELEASED**  
*09/06/12 MD*



**FIGURE 1 - SUPPORT INSTALLATION**